ABSTRACT OF THE DISCLOSURE

A low cost control apparatus of a contact mechanism resolving a disadvantage caused when a contact body is moved to make contact with a contacted body by an actuator. A synchronizing mechanism, which a coupling sleeve rotatably and integrally provided with an input shaft is pushed against a synchronizer ring disposed between the coupling sleeve and a synchronized gear, thereby synchronizing rotational speeds of both the components to engage them, is modeled as a collision between an inertia system object and an elastic system object. A computation coefficient (VPOLE, f in Fig. 9) of a switching function for sliding mode control having a deviation between an actual position of the coupling sleeve (Psc, d in Fig. 9) and a target position (Psc_cmd, e in Fig. 9) as a state variable is changed depending on the actual position (Psc), and thereby changing a control ability of the model against a disturbance.